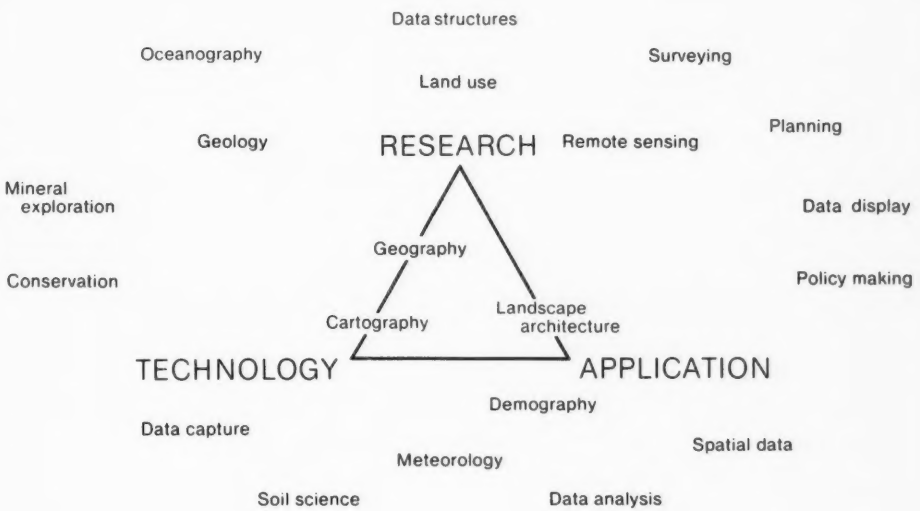
International Journal of

GEOGRAPHICAL INFORMATION SYSTEMS

Contents of Volume 3



Taylor & Francis
London • New York • Philadelphia

International Journal of Geographical Information Systems

Editors

J. T. Coppock
Department of Geography
University of Edinburgh
Edinburgh EH8 9XP
UK

K. E. Anderson
Eastern Mapping Center
US Geological Survey
Reston, Virginia 22092
USA

Book Review Editor

A. J. Crosbie
Department of Geography
University of Edinburgh
Edinburgh EH8 9XP
UK

News Editor

D. J. Gugan
Laser-Scan Laboratories Ltd
Cambridge Science Park
Cambridge CB4 4FY
UK

Editorial Committee, UK

P. F. Dale, *London*; M. J. Jackson, *Cambridge*; H. Mounsey, *London*; D. W. Rhind, *London*

Editorial Committee, North America

D. J. Cowen, *Columbia*; T. Smith, *Santa Barbara*

Editorial Board

R. Aangeenbrug, *Washington*; R. Abler, *Washington*; M. A. O. Ayeni, *Ibadan*; K. E. Brassel, *Zurich*; P. A. Burrough, *Utrecht*; Chen Qiming, *Beijing*; Chen Shupeng, *Beijing*; I. K. Crain, *Calgary*; J. Dangermond, *Redlands*; P. Forer, *Christchurch*; B. Garner, *Sydney*; M. F. Goodchild, *Santa Barbara*; S. T. E. Hagerstrand, *Lund*; P. Hayward, *Southampton*; R. G. Healey, *Edinburgh*; S. Kubo, *Tokyo*; A. Liouty, *Moscow*; D. Marble, *Columbus*; R. Marx, *Washington*; H. Moellering, *Columbus*; W. Moran, *Auckland*; P. Nag, *Dehra Dun*; J. O'Callaghan, *Canberra*; D. Ovadia, *Nottingham*; D. Pearce, *Perth*; D. Peuquet, *University Park, Pennsylvania*; J. Plevin, *Swindon*; D. S. Simonett, *Santa Barbara*; W. Tobler, *Santa Barbara*; R. Tomlinson, *Ottawa*; J. Townshend, *Maryland*; J. L. van Genderen, *Enschede*; T. C. Waugh, *Edinburgh*

International Journal of Geographical Information Systems

Taylor & Francis, London, New York, Philadelphia

Contents of Volume 3

Number 1

Editorial. J. T. Coppock and K. E. Anderson 1

A review of quadtree-based strategies for interfacing coverage data with digital elevation models in grid form. D. M. Mark, J. P. Lauzon and J. A. Cebrian 3

Data structures for three-dimensional spatial information systems in geology. C. B. Jones 15

Historical data as an explicit component of land information systems. R. Vrana 33

QPF. A versatile query language for a knowledge-based geographical information system. Jian-Kang Wu, Tao Chen and Li Yang 51

The Thailand Land Titling Project. First steps in a parcel-based LIS. P. Angus-Leppan 59

Vegetative succession and controlled fire in a glades ecosystem. A geographical information system approach. K. E. Lowell and J. H. Astroth, Jr 69

A review of low-cost scanners. J. Drummond and M. Bosma 83

Forthcoming events 97

Number 2

Editorial. Forthcoming special issues. J. T. Coppock and K. E. Anderson 99

SIRO-DBMS: a database tool-kit for geographical information systems. D. J. Abel 103

The research plan of the National Center for Geographic Information and Analysis. The NCGIA 117

Towards a typology of geographical information systems. I. Bracken and C. Webster 137

Schema integration analysis for the development of GIS databases. T. L. Nyerges 153

The development and state of the art of GIS in Romania. C. Vasile, D. Cristescu and C. Savulescu 185

Letters 191

Forthcoming events 195

Number 3

Editorial. J. T. Coppock and K. E. Anderson 199

An efficient use of quadtrees in a geographical information system. M. N. Gahegan 201

A review of temporal database research and its use in GIS applications. G. Langran 215

Modelling the temporal element in land information systems. S. Price 233

A graphic query language for cartographic and land information systems. Pong-Chai Goh 245

The current state and the main trends in the development of geographical information systems in the U.S.S.R. A. V. Koshkariov, V. S. Tikunov and A. M. Trofimov 257

Book reviews 273

News section 277

Forthcoming events 285

Number 4

Editorial. J. T. Coppock and K. E. Anderson 289

A model for data set management in large spatial information systems. D. J. Abel 291

Propagation of errors in spatial modelling with GIS. G. B. M. Heuvelink, P. A. Burrough and A. Stein 303

A comparison of techniques for calculating gradient and aspect from a gridded digital elevation model. A. K. Skidmore 323

On the spatial representation and accuracy of address-based data in the United Kingdom. A. C. Gatrell 335

The role for a geographical information system in a large environmental project. W. G. Campbell, M. Robbins Church, G. D. Bishop, D. C. Mortenson and S. M. Pierson 349

JAMGIS, the first Jamaican Government comprehensive multi-data geographical information system. Achievements and problems. L. A. Eyre 363

Forthcoming events 373

Index of authors 375